



1. Title

Microbial Biodiversity and Ecosystem Functions in Volcanic Soils

2. Type

Commission Symposium: Comm. 2.3-Soil Biology

3. Organizer(s) & Convener

Jong-Shik Kim

Gyeongbuk Institute for Marine Bioindustry, 688-3, Hujeong-Ri, Jukbyeon-Myeon, Uljin-Gun, Gyeongbuk, 767-813, KOREA

Tel: 82-54-780-3451

Fax: 82-54-780-3469

E-mail: jskim@gimb.or.kr, soilmicrobiome@gmail.com

* Convener

Garry King, Louisiana State University, USA

E-mail: gkingme@gmail.com

Joonhong Park, Yonsei University, KOREA

E-mail: parkj@yonsei.ac.kr

4. Rationale

Volcanic soils cover 1% of Earth's surface, but support 10% of the world's population, and include some of its most productive agroecosystems and natural ecosystems. Like all soils, volcanic soils are sensitive to global change (temperature and hydrologic regimes), and responses of these soils to changes can affect human uses of them.

Overarching goals of the symposium proposed here include:

Broadening the volcanic soils research network;

Promoting links with existing networks;

Facilitating regional to global-scale collaborations;

Developing and promoting use of databases on volcanic soils;

Incorporating volcanic soils into strategies for adaptation to global change.

The session proposed here will address: 1) specific features and genesis of volcanic soils; 2) pyroclastic rock and ash soils weathering; 3) use and degradation in unregulated construction and urban sites, and 4) biogeochemical cycling in forests developing on volcanic soils. We also expect to develop a framework for better understanding the role and dynamics of microbial diversity in forested volcanic soils, and for using such forests to understand biogeochemical cycling with respect to predicted global climate change.

5. Objectives

The objectives of the session are to:

Discuss and exchange research findings on the interactions of volcanic soils and biodiversity, status of biodiversity and effects of volcanic soils on microbial diversity





Identify research gaps and conceptualize collaborative research undertakings on volcanic soils and biodiversity

Identify strategies for volcanic soils

Link potential donors, and research experts and educators for the conduct of future research and implementation of programs on volcanic soils and biodiversity conservation and climate change adaptation.

6. Description

The session is a special program for volcanic soils, which plans as the networking platform for research of the soils. Many Volcanic soils have excellent physical properties that make them highly desirable for a wide range of uses.

We encourage scientists to take science-based measures to conserve and sustainably manage the biodiversity of volcanic soils, including not only soil classifications and identification of biodiversity but also soil-, plant-, lichen-microbe relationships and monitoring environmental factors, such as carbon and nitrogen cycling.

